NOV 3 0 1995

NAS1.53/3:95-OSS-17

National Aeronautics and
Space Administration

October 30, 1995

NRA 95-OSS-17

RESEARCH ANNOUNCEMENT

HIGH ENERGY ASTROPHYSICS

SUPPORTING RESEARCH

AND

TECHNOLOGY

PROGRAM

Letters of Intent Due: December 1, 1995
Proposals Due: February 1, 1996

for ~~NRA~~ 0830-H-05 96-005832 COMPLETED 1

OMB Approval No. 2700-0087

THE HIGH ENERGY ASTROPHYSICS

SUPPORTING RESEARCH AND TECHNOLOGY PROGRAM

NASA Research Announcement
Soliciting Proposals
for
Basic Research to be Conducted during the Period
Fiscal Year 1997 through Fiscal Year 1999

NRA 95-OSS-17
Issued: October 30, 1995
Proposals due: February 1, 1996

Office of Space Science
National Aeronautics and Space Administration
Washington, DC 20546

BLANK PAGE

SOLICITATION FOR THE
HIGH ENERGY ASTROPHYSICS
SUPPORTING RESEARCH AND TECHNOLOGY PROGRAM

This NASA Research Announcement (NRA) solicits basic research proposals to conduct investigations which are relevant to NASA's High Energy Astrophysics (HEA) program. The primary goal of the HEA program is to obtain a better understanding of astrophysical objects (excluding the Sun) and phenomena as revealed through their high energy radiation characteristics. The HEA program comprises the fields of x-ray and γ-ray astronomy, which correspond operationally to photon energies in the approximate range of 0.1 keV - 10 GeV.

The purpose of the High Energy Astrophysics Supporting Research and Technology (SR&T) program is to provide support for the HEA flight program in the disciplines of x and γ-ray astronomy. In the context of this NRA, X rays are defined as photons in the approximate energy range 0.1 - 30 keV, while γ-rays are considered to lie in the energy range 30 keV - 10 GeV. The HEA SR&T program provides support for basic research relevant to the design and development of instrumental concepts for future NASA high-energy astrophysics missions and the conduct of scientific investigations via exposure of instrumentation carried on free-flying spacecraft, high-altitude sounding rockets, and high-altitude balloons. It is presently expected that the HEA SR&T program will be funded for the 3-year period of this NRA at an annual level of about $9 million.

Theoretical investigations which are generally relevant to this science area are solicited separately under the Astrophysical Theory Program. Projects directed mainly toward the analysis of archival data are covered under the Astrophysics Data Program. **Investigations which fall into either of these categories are not solicited by this NRA.**

Participation in this program is open to all categories of domestic and foreign organizations, including educational institutions and other nonprofit organizations, corporations, NASA Centers, and other Government agencies. Proposals may be submitted at any time during the period specified in this NRA and will be evaluated by a scientific peer review panel as stipulated herein.

Further details relevant to the HEA SR&T programs are included in the 5 appendices described briefly below. **You must request these appendices**, either electronically (at the ftp address given below) or by mail, telephone, or FAX request (see addresses and numbers below). Hard-copy requests (to Dr. Louis J. Kaluzienski, at the address below) for the appendices should be submitted soon to receive them early in the proposal preparation period. We also request your help in correcting our mailing lists; if your address has changed, please use the enclosed form to update the mailing list used by the NASA Office of Space Science.

Appendices:

A. The High Energy Astrophysics Supporting Research and Technology Program
   Table 1 -- NASA X-ray Astronomy Missions
   Table 2 -- NASA γ-ray Astronomy Missions
   Table 3 -- Current X-ray Astronomy Research Areas
   Table 4 -- Current γ-ray Astronomy Research Areas

B. Guidelines for Responding to NASA Research Announcements

C. Guidelines for Preparation of Proposal Cost Summaries

D. Additional Information Regarding Proposal Submission, Evaluation, Selection, and Implementation

E. Proposal Forms

Appendix A provides specific information relevant to this program. Detailed information relevant to the goals of NASA's HEA Programs during the next decade or so is provided in the most recent reports of NASA's X-ray and γ-ray Astronomy Program Working Groups; these reports are available upon request from the HEA program office at the address given below. Appendix B contains the basic guidance needed for preparation of solicited proposals in response to an NRA. Appendix C provides information relevant to the cost section of proposals. While cost proposals are not required to conform exactly to this format, information supplied at this level of detail would be very helpful in assuring the expeditious processing of the grant procurements for selected proposals. Appendix D provides additional information on the submission of proposals and their evaluation, selection, and implementation that augments the information contained in Appendix B. The information in Appendix D is applicable to this NRA only. Appendix E contains the title page and first data sheet for the offeror's proposal. Please replicate these two forms and use them in your submission.

Below is a summary of pertinent information regarding this NRA for the High-Energy Astrophysics Supporting Research and Technology Program.

IDENTIFIER:	NRA 95-OSS-17
SUBMIT LETTERS OF INTENT TO PROPOSE VIA EMAIL TO:	hea-srt@hq.nasa.gov
SUBMIT LETTERS OF INTENT BY:	December 1, 1995
SUBMIT PROPOSALS TO:	HEA SR&T Program Office Code S 400 Virginia Avenue SW, Suite 700 Washington, DC 20024
SUBMIT PROPOSALS BY:	February 1, 1996
NUMBER REQUIRED:	15 copies
SELECTING OFFICIAL:	Associate Administrator Office of Space Science
ADDITIONAL INFORMATION CAN BE OBTAINED FROM:	Dr. Louis J. Kaluzienski Code S National Aeronautics and Space Administration Washington, D.C. 20546-0001 Telephone: 202-358-0370; FAX: 202-358-3096 Internet: lkaluzienski@hq.nasa.gov
ELECTRONIC RETRIEVAL OF APPENDICES:	ftp://ftp.hq.nasa.gov/pub/astrophysics/NRAs/95-OSS-17

Your interest and cooperation in participating in this effort are appreciated.

Wesley T. Huntress, Jr.
Associate Administrator for
Space Science

BLANK PAGE

NASA Research Announcement (NRA)/Announcement of Opportunity (AO) Mailing List Update

If your current address is NOT up-to-date, please fill out this form completely.

This is the update form for the NASA Office of Space Sciences (OSS) NRA/AO mailing list. Please fill out CONTACT INFORMATION completely. Check only those that apply in Institution Type and Discipline. Fold the form, secure with tape, and mail it back to the address on the reverse side. Proper postage must be applied.

Please check which announcements you would like to receive:

- ☐ 1. NASA Research Announcements (basic, non-flight, on-going research)
- ☐ 2. Announcements of Opportunity (specific space flight mission)

Must check one, please include code number from mailing label:

- ☐ 1. Please ***add*** my name to the mailing list
- ☐ 2. Please ***remove*** my name from the mailing list (please attach mailing label)
- ☐ 3. Please ***update*** my current listing

CONTACT INFORMATION If your address has changed or your mailing label is incorrect, please provide ***COMPLETE*** contact information

Code Number: (obtain from mailing label) _____ Salutation: (Mr.,Mrs.,Ms.,Dr.,Prof.,etc.) _____ Suffix (Ret.,PhD.,Jr.,III,etc.) _____

First Name: _____ MI: _____ Last Name: _____

Organization: _____

Division / Department: _____

Street: _____

City: _____ State: _____ Zip _____

Telephone No: _____ Fax No: _____

E-Mail Address: _____ Internet Address: _____

Country: (foreign addresses, please specify) _____

Institution Type

(check only those that apply)

- ☐ 1. College or University
- ☐ 2. Minority College or University
- ☐ 3. Foreign Addressee
- ☐ 4. Minority Business
- ☐ 5. NASA HQs/Center
- ☐ 6. Nonprofit Corporation
- ☐ 7. Other Government Agency
- ☐ 8. Private Industry
- ☐ 9. Small Business

Societies:

- ☐ A. American Astronomical Society
- ☐ B. American Geophysical Union
- ☐ C. Others _____

Discipline:

(check only those that apply)

1. Astronomy and Astrophysics

- ☐ A. Theory and Modeling
- ☐ B. Instrumentation (Technology Dev)
- ☐ C. Laboratory Astrophysics
- ☐ D. Data Analysis (Archival)
- ☐ E. Observational Programs

2. Solar System Exploration

- ☐ A. Planetary Atmospheres and Astronomy
- ☐ B. Planetary Materials and Geochemistry
- ☐ C. Planetary Geology and Geophysics
- ☐ D. Instrument Development
- ☐ E. Origins of Solar Systems
- ☐ F. Exobiology

3. Space Physics

- ☐ A. Cosmic and Heliosphere Physics
- ☐ B. Solar Physics
- ☐ C. Magnetospheric Physics
- ☐ D. Iono-Thermo-Mesospheric Physics

4. Information Systems/Computer Science

- ☐ A. High Performance Computing and Networking
- ☐ B. Scientific Data Analysis and Visualization
- ☐ C. Science Data Storage and Management
- ☐ D. Software Technology

SPI
7/94

8

Please Tape (Do not staple)

PLACE STAMP HERE
POST OFFICE WILL NOT DELIVER WITHOUT PROPER POSTAGE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
OFFICE OF SPACE SCIENCE
MAIL CODE SPI
WASHINGTON, DC 20546-0001

NASA OFFICIAL MAILING LIST UPDATE

National Aeronautics and
Space Administration
Code SPI
Washington, DC 20546-0001

FIRST-CLASS MAIL
POSTAGE & FEES PAID
NASA
Permit No. G-27

Official Business
Penalty for Private Use, $300

NASA RESEARCH ANNOUNCEMENT

DATED MATERIAL

10

END

DATE FILMED

02/27/96